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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,244	09/24/2003	Albert M. Benzoni	XPNT24NP	8138

36394 7590 05/17/2004
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EXAMINER

PALMER, PHAN T H

ART UNIT PAPER NUMBER

2874

DATE MAILED: 05/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

10/671,244

Applicant(s)

BENZONI ET AL.

Examiner

PHAN T.H. PALMER

Art Unit

2874

-- The MAILING DATE of this communication appears on the c ver sh et with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disp sition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-9,12-14,17-21,24-26 and 29-33 is/are rejected.
- 7) ☒ Claim(s) 3,4,10,11,15,16,22,23,27,28,34 and 35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Pri rity under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

1. Applicant's cooperation is requested in correcting any error of which applicant may become aware in the specification.

Drawings

2. This application has been filed with formal drawings.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 5-9, 12-14, 17-21, 24-26, and 29-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Bartlett et al. (5,646,444).

The Bartlett et al reference discloses in figure 3, a substrate, comprising:

- a substrate (202) having a recessed area (306) on a surface thereof; and
- a heat sink (206) comprising heat sink material deposited within the recessed area (306), the heat sink material (metal or alloy) having thermal conductivity greater than thermal conductivity (ceramic) of the substrate (col. 2, lines 40-44).

With regard to claims 1, 13, and 25, the Bartlett et al reference discloses all the claimed invention.

With regard to claims 2, 14, and 26, the heat sink has a substantially flat surface substantially flush with the surface of the substrate, is disclosed in the Bartlett et al.

With regard to claims 5-9, 17-21, and 29-33, the apparatus further comprising an electrical contact formed on the substrate and positioned so as to establish electrical continuity with an optical device mounted on the substrate in thermal contact with the heat sink, is disclosed in the Bartlett et al reference.

With regard to claims 12, and 24, the apparatus comprising a heat-generating device mounted on the substrate in thermal contact with the heat sink, is disclosed in the Bartlett et al reference (col. 1, lines 26-27).

Allowable Subject Matter

4. Claims 3-4, 10-11, 15-16, 22-23, 27-28, and 34-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The Bartlett et al reference does not disclose a planar optical waveguide formed on the substrate and positioned so as to enable optical coupling between

the planar optical waveguide and an optical device mounted on the substrate in thermal contact with the heat sink, as discloses in claims 3-4, 15-16, and 27-28.

The Bartlett et al reference does not discloses the substrate comprises silicon with a silica optical buffer layer on the surface thereof, and the heat sink material comprises diamond, as discloses in claims 10-11, 22-23, and 34-35.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Chiang (5,822,848) discloses a method of detachably mounting a heat sink to a lead frame comprising a bonding kit having a lower cavity (20) provides a recessed area (22) for the heat sink (10).

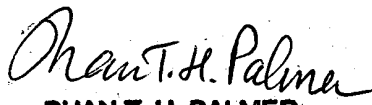
CONTACT INFORMATION

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHAN T.H. PALMER whose telephone number is (571) 272-2354. The examiner can normally be reached on 4/4 OFF MONDAY.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RODNEY B. BOVERNICK can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PTHP
05/05/04


PHAN T. H. PALMER
PRIMARY EXAMINER